

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Frederic Bauchot

Examiner: Singh, Rachna

Serial No. 09/995,266

Group Art Unit: 2176

Filed: 11/27/2001

Docket No.: **FR920000062US1**

Title: **METHOD AND SYSTEM IN AN ELECTRONIC SPREADSHEET FOR  
PERSISTENTLY FILLING BY SAMPLES A RANGE OF CELLS**

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Commissioner for Patents  
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Alexandria, VA 22313-1450

**BRIEF OF APPELLANT**

This Appeal Brief, pursuant to the Notice of Appeal filed August 6, 2007, is an appeal from the rejection of the Examiner in the Office Action dated May 7, 2007.

**REAL PARTY IN INTEREST**

International Business Machines, Inc. is the real party in interest.

**RELATED APPEALS AND INTERFERENCES**

None.

**STATUS OF CLAIMS**

Claims 1, 2 and 7-24 are rejected. Claims 3-6 are canceled. This Brief is in support of an appeal from the rejection of claims 1, 2 and 7-24.

**STATUS OF AMENDMENTS**

There are no After-Final Amendments which have not been entered.

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## SUMMARY OF CLAIMED SUBJECT MATTER

### A. CLAIM 1 - INDEPENDENT

The present invention provides a method for filling empty cells of a range of cells in a multi-dimensional spreadsheet comprising a plurality of cells identified by a cell address along each dimension of the spreadsheet. See specification, page 6, lines 1-6.

The range of cells is selected. The range comprises a plurality of sample cells and one or a plurality of empty cells, wherein prior to said selecting each sample cell contains a sample value and an empty cell contains no value or a value not considered as a sample value. The content  $y_i$  of each sample cell and each empty cell is associated with a particular value  $x_i$  of a variable  $x$ . See specification, page 18, line 20 - page 19, line 11.

After the range of cells  $s$  selected, the sample cells and the empty cells are ordered according to the values  $x_i$  associated with the content of said cells. See FIG. 3A ( $X_i$  column) and specification, page 15, lines 20-26.

After said ordering, the empty cells are processed and for each empty cell, the following steps are performed: identifying the value  $x_i$  associated with the content of the empty cell; selecting one or a plurality of previous sample cells with respect to the empty cell; selecting one or a plurality of next sample cells with respect to the empty cell; computing the value  $y_i$  of the empty cell according to the values  $y_{\text{previous}}$  contained in the selected one or plurality of previous sample cells, and the values  $y_{\text{next}}$  contained in the selected one or plurality of next sample cells; filling the empty cell with said computed value  $y_i$ . See 6A (step 612) and specification, 26, line

22 - page 27, line 10.

After the empty cells are processed, the spreadsheet is displayed via a graphical user interface (GUI). See specification, page 9, lines 22-23.

#### **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Claims 1-2 and 7-24 stand rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by Flaherty, John, "Selected Excel Basics, Excel Tips for Efficient Spreadsheet Use", Available: [http://www.bf.rmit.edu.au/quant/Excel/Excel\\_Tips.pdf](http://www.bf.rmit.edu.au/quant/Excel/Excel_Tips.pdf) ., available in 1999 (as further evidenced by screen shots provided from Microsoft Excel, copyright 1985-1999).

## ARGUMENT

### GROUND OF REJECTION 1

Claims 1-2 and 7-24 stand rejected under 35 U.S.C. § 102(a) as allegedly being anticipated by Flaherty, John, "Selected Excel Basics, Excel Tips for Efficient Spreadsheet Use", Available: [http://www.bf.rmit.edu.au/quant/Excel/Excel\\_Tips.pdf](http://www.bf.rmit.edu.au/quant/Excel/Excel_Tips.pdf)., available in 1999 (as further evidenced by screen shots provided from Microsoft Excel, copyright 1985-1999).

Applicant provides three independent arguments to demonstrate that the preceding rejection of claims 1-2 and 7-24 under 35 U.S.C. § 102(a) is not valid. The three independent arguments demonstrate: (1) Flaherty cannot be used as a reference to support the rejection; (2) the references of Flaherty and Screen Shots cannot be combined to demonstrate alleged anticipation claims 1-2 and 7-24 under 35 U.S.C. § 102(a); and (3) Flaherty does not anticipate claims 1-2 and 7-24.

#### Flaherty Cannot Be Used as Reference Under 35 U.S.C. § 102(a)

Appellant respectfully contends that Flaherty cannot be used as a reference to support the rejection of claims 1-2 and 7-24 under 35 U.S.C. § 102(a).

The Examiner cited Flaherty as a printed publication that allegedly anticipates claims 1-2 and 7-24 under 35 U.S.C. § 102(a). However with respect to a printed publication, 35 U.S.C. § 102(a) recites: "person shall be entitled to a patent unless ... the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, **before the invention thereof by the applicant for patent**" (emphasis added). Therefore, a printed publication can be used as a description of an invention only if the

publication was published before the invention and certainly before the filing date of the patent application associated with the invention.

The Examiner has offered no proof that Flaherty was published before the filing date, namely 11/27/2001, of the present patent application. Therefore, Flaherty cannot be used as a printed publication to anticipate claims 1-2 and 7-24 under 35 U.S.C. § 102(a).

The Examiner alleges that the Screen Shots allegedly associated with the 1999 version of Microsoft Excel evidences that Flaherty was publically available in 1999. Specifically in the Advisory Action, the Examiner argues: "Examiner has provided various screen shots of Microsoft Excel (copyright in 1999) to prove that the features disclosed in Flaherty reference were disclosed in 1999 as well as outlined these features above. Each of the screenshots provided in the last office action correlate to the figures in the Flaherty reference. For example:

- The second figure on page 2 of Flaherty corresponds to the figure on page 3 of the screenshots.
- The first figure on page 3 of Flaherty corresponds to the figure on page 4 of the screenshots.
- The second figure on page 3 of Flaherty corresponds to the figure on page 5 of the screenshots.
- The second figure on page 4 of Flaherty corresponds to the figure on page 6 of the screenshots.
- The first figure on page 5 of Flaherty corresponds to the figure on page 7-9 of the screenshots.
- The third figure on page 5 of Flaherty corresponds to the figure on page 10 of the screenshots.
- The last figure on page 11 of Flaherty corresponds to the figure on page 11 of the screenshots.
- The second figure on page 12 of Flaherty corresponds to the figure on page 12 of the screenshots".

In response, Appellant respectfully contends that the copyright notice appearing on page 1 of the screenshots evidences that the program Microsoft Excel 2000 has a copyright date of

1985-1999 and therefore that the program Microsoft Excel 2000 was available to users during the years 1985-1999. However, the program Microsoft Excel 2000 was also available to users after 1999 and was most certainly available to users after the filing date of November 27, 2001 of the present patent application. The remaining pages 2-12 of Screen Shots presented as evidence by the Examiner do not indicate the specific dates when the screen shots of pages 2-12 were generated allegedly using Microsoft Excel 2000. The Examiner has not presented any evidence allegedly demonstrating that the screen shots of pages 2-12 of Screen Shots were generated via execution of Microsoft Excel 2000 before the filing date of November 27, 2001 of the present patent application. A user may have executed Microsoft Excel 2000 after November 27, 2001 to generate the screen shots of pages 2-12 of Screen Shots and the Examiner has not presented any evidence demonstrating otherwise.

In addition, Appellant asserts that the screen shots of pages 2-12 of Screen Shots have no legal credibility as evidence, because the Examiner has not cited any source from which the screen shots of pages 2-12 were extracted and reprinted for use in the present appeal. Therefore, the screen shots of pages 2-12 of Screen Shots relied upon by the Examiner are not legally credible evidence.

Therefore, one may not infer from Screen Shots when Flaherty was publically available.

Accordingly, Appellant reiterates that Flaherty cannot be used as a reference to support the rejection the rejection of claims 1-2 and 7-24 under 35 U.S.C. § 102(a), because the Examiner has offered no proof that Flaherty was published before the filing date, namely 11/27/2001, of the present patent application.

The References of Flaherty and Screen Shots Cannot Be Combined To Demonstrate Alleged Anticipation of Claims 1-2 and 7-24 Under 35 U.S.C. § 102(a)

Only a single reference can be used by the Examiner to reject claims 1-2 and 7-24 as allegedly anticipated under 35 U.S.C. § 102(a). By combining the references of Flaherty and Screen Shots, the Examiner's rejection of claims 1-2 and 7-24 is outside the scope of 35 U.S.C. § 102(a) and thus improper.

In the Advisory Action, the Examiner argues: "MPEP 2131.01 discussed multiple references 35 U.S.C. 102 rejections where multiple references can be used to prove the primary reference contains an enabled disclosure. Specifically, when a claimed machine is disclosed identically by the reference, an additional reference may be relied upon to show that the primary reference has an "enabled disclosure". Also, an extra reference or evidence can be used to show an inherent characteristic of the thing taught by the primary reference. Such is the case here. The Microsoft Excel 2000 screen shots are evidence that the teachings of the primary reference were an inherent characteristic of the spreadsheet."

In response, Applicant respectfully contends that the screen shots generated by Microsoft Excel 2000 are not being used to show that the teachings of Flaherty are an enabled disclosure.

In further response, Applicant respectfully contends that the screen shots generated by Microsoft Excel 2000 does not show that a characteristic missing in Flaherty is inherent. The Examiner has not identified any such characteristic and its alleged inherency.

Furthermore in the Advisory Action, the Examiner makes it clear that the combination of Flaherty and Screen Shots is being used to reject claims 1-2 and 7-24 under 35 U.S.C. § 102(a) with respect to alleged disclosure of specific features of claims 1-2 and 7-34, which is improper

under 35 U.S.C. § 102(a) . Specifically, the Advisory Action, page 2, line 35 - page 3, line 12 invokes numerous citations of both Flaherty and Screen Shots to demonstrate alleged disclosure of features of the claims 1-2 and 7-24 by Flaherty and Screen Shots.

Therefore, the Examiner has improperly invoked the combination of Flaherty and Screen Shots to reject specific features of claims 1-2 and 7-24 under 35 U.S.C. § 102(a), which is legally impermissible.

#### Flaherty Does Not Anticipate Claims 1-2 and 7-24

Appellant respectfully contends that Flaherty does not anticipate claim 1, because Flaherty does not teach each and every feature of claim 1.

Appellant respectfully contends that Flaherty does not teach the feature: “selecting the range of cells, said range comprising a plurality of sample cells and one or a plurality of empty cells, wherein **prior to said selecting** each sample cell contains a sample value ...; **after said selecting**, ordering the sample cells ...; and **after said ordering**, processing the empty cells comprising ... computing the value  $y_i$  of the empty cell according to the values  $y_{\text{previous}}$  contained in the selected one or plurality of previous sample cells, and the values  $y_{\text{next}}$  contained in the selected one or plurality of next sample cells” (emphasis added).

The Examiner argues that Flaherty discloses “[e]ntering a data series with specific start and stop values entered for a data series. For example cell A2 may contain a start value of 10 and a stop value of 90 is indicated with a step value of 5. See pages 4-5, "Entering a Data Series". In indicating a start and stop value in a series of cells, the "previous sample cell" and "next sample cell" of the empty cells in between the start value and stop value are specified.”



In response, Appellant respectfully contends that in Flaherty the start value of 10 and the stop value of 90 in the Series dialogue box is indicated in Flaherty, page 5. Flaherty does not anywhere teach that the start value of 10 and the stop value of 90 (which are the sample values) are placed in cells of the spreadsheet **prior to** selecting the range of cells, as required by claim 1.

In claim 1, the quoted phrases “**prior to said selecting**”, “**after said selecting**”, and “**after said ordering**” require that the sample cells containing their respective sample values must be in the spreadsheet **before the range of cells is selected**, which Flaherty does not teach.

Appellant points out that the words “sample cell” and “empty cell” used in said computing  $y_i$  are subject to the claimed requirement of: “wherein **prior to said selecting** each sample cell contains a sample value and an empty cell contains no value or a value not considered as a sample value”.

In contrast, in the example in pages 4-5 of Flaherty, Step 1 fills the cell A1 with the starting value of 10. Step 2 enters the step value of 5 and the stop value of 90 into a dialog box shown in the Figure at the top of page 5 of Flaherty to “select the range of cells to fill”. Step 3 selects the Fill command which generates the filled-in cells A2, ..., A17 shown in the Figure at the top of page 5 of Flaherty.

Thus, Flaherty teaches selecting the range of cells in Step 2 **before** the sample values are placed in the spreadsheet in Step 3, which is the **exact opposite** of what claim 1 requires.

In summary, claim 1 requires that a plurality of sample cells (i.e., at least two sample cells) contain a sample value in each such sample cell before the range of cells is selected.

However, Flaherty discloses in Step 1 only one sample cell (A1) as having a sample value (10) therein before the range of cells (10 to 90 in steps of 5) is selected in Step 2. Therefore Flaherty

does not teach the preceding feature of claim 1.

In “Response to Arguments”, the Examiner argues: “The dialog box represents the spreadsheet cells. In other words, the claim does not necessarily require that the values be generated from within the cells of the spreadsheet but rather that the values be generated and processed for empty cells which is what the dialog box does. Using the dialog box, the cells A2-A17 can be filled in with values based on previous cell value and next cell value as depicted in the EXCEL screenshots on pages 8-9 and also in Flaherty on page 5.”

In response, Appellant respectfully contends that preceding argument by the Examiner is not persuasive, because claim 1 requires that the sample values be contained in the sample cells of the spreadsheet **before** the range of cells is selected, which Flaherty does not teach.

In addition, Flaherty does not disclose an algorithm for generating the filled-in cells A1, A2, ..., A17 shown in the Figure at the top of page 5 of Flaherty. Therefore, Flaherty does not disclose computing a value for any of the empty cells A2, ..., A17 according to a value ( $y_{\text{previous}}$ ) contained in **a previous cell** and a value ( $y_{\text{next}}$ ) contained in **a next cell**. Applicant asserts that it is not inherent that a value would be computed for any of the empty cells A2, ..., A17 according to a value ( $y_{\text{previous}}$ ) contained in **a previous cell** and a value ( $y_{\text{next}}$ ) contained in **a next cell**. For example, the following simple algorithm in C-language code could be used to fill in the empty cells in Flaherty’s example by using **only previous cell values**:

for ( $i = 2$  ;  $i=18$ ;  $i++$ )  $A_i = A_{i-1} + 5$ ;

Based on the preceding arguments, Appellant respectfully maintains that Flaherty does not anticipate claim 1, and that claim 1 is in condition for allowance. Since claims 2 and 7-24

depend from claim 1, Appellant contends that claims 2 and 7-24 are likewise in condition for allowance.

In addition, with respect to claim 2, Flaherty does not teach the feature: "wherein said step of computing the value  $y_i$  of each empty cell according to the values  $y_{\text{previous}}$  contained in the selected one or plurality of previous sample cells, and the values  $y_{\text{next}}$  contained in the selected one or plurality of next sample cells, comprises the further step of: computing the value  $y_i$  of the empty cell according to the values  $x_{\text{previous}}$  associated with the content  $y_{\text{previous}}$  of the selected one or plurality of previous sample cells, and the values  $x_{\text{next}}$  associated with the content  $y_{\text{next}}$  of the selected one or plurality of next sample cells."

The Examiner argues: "In reference to claim 2, Flaherty teaches entering a data series with specific start and stop values entered for a data series. For example cell A2 may contain a start value of 10 and a stop value of 90 is indicated with a step value of 5. See pages 4-5, "Entering a Data Series". In indicating a start and stop value in a series of cells, the "previous sample cell" and "next sample cell" of the empty cells in between the start value and stop value are specified."

In response, Appellant the preceding argument by the Examiner does not demonstrate a teaching by Flaherty of the preceding feature of claim 2, because the preceding algorithm in Flaherty stated by the Examiner uses  $y$ -values in computing the value  $y_i$  of each empty cell, but does not use  $x$ -values as required by claim 2.

Accordingly, Flaherty does not anticipate claim 2.

In addition, with respect to claim 8, Flaherty does not teach the feature: "wherein the step of computing the value  $y_i$  of an empty cell comprises the step of computing the value  $y_i$  as equal to:

$$y_i = y_{\text{previous}} + (x_i - x_{\text{previous}}) * ((y_{\text{next}} - y_{\text{previous}}) / (x_{\text{next}} - x_{\text{previous}}))$$

where :

$y_{\text{previous}}$  is the content of a previous cell containing a sample;

$x_{\text{previous}}$  is the value of the variable  $x$  associated with the content of the previous cell containing a sample;

$y_{\text{next}}$  is the content of a following cell containing a sample;

$x_{\text{next}}$  is the value of the variable  $x$  associated with the content of a following cell containing a sample;

$x_i$  is the value of the variable  $x$  associated with the empty cell."

The Examiner argues: "In reference to claim 8, Flaherty teaches the value of  $y_i$  is calculated by determining the pattern in the range of cells. This entails determining content of a previous/start cell and next/stop cell and the value associated with the content in order to determine the value of the empty cell. For example, content and value of a previous/start cell and a next/stop cell are used to calculate what goes into an empty cell. See pages 4-5, "Entering a Data Series".".

In response, Appellant asserts Flaherty does not anywhere teach use of the formula:  $y_i = y_{\text{previous}} + (x_i - x_{\text{previous}}) * ((y_{\text{next}} - y_{\text{previous}}) / (x_{\text{next}} - x_{\text{previous}}))$  as required by claim 8.

Accordingly, Flaherty does not anticipate claim 8.

In addition, with respect to claim 9, Flaherty does not teach the feature: "wherein said selected range of cells comprises a double column or double row range of cells, said range of

cells comprising  $2N$  cells, wherein the  $i$ -th cell in a first column or first row comprises a value  $x_i$  and the second column or second row comprises a value  $y_i = f(x_i)$ .”

The Examiner argues: “In reference to claim 9, Conlon discloses a means in which a selected range of cells comprises a single column and row of cells. See Flaherty figures on pages 1-2 and the corresponding EXCEL screen shot on page 3. Each cell comprises a value.”.

In response, Appellant respectfully contends that the Examiner’s argument is not persuasive, because neither “a double column” nor “a double row” reads on “a single column and row”.

Accordingly, Flaherty does not anticipate claim 9.

In addition, with respect to claim 10, Flaherty does not teach the feature: “wherein the step of filling cells comprises the further step of: defining a table and associating said table with the selected range of cells, said table comprising for each empty cell  $i$ :

- an “index field” for identifying said empty cell;
- a “sample field” for indicating that said cell is an empty cell;
- a “ $X_i$  field” with the value  $x_i$  associated with said empty cell;
- an “index of previous sample field” with the value of the “index field” of a previous record having a sample value;
- a “Prev. sample field” with the value of the “ $X_i$  field” of a previous record having a sample value;
- a “ $f(\text{Prev. sample})$  field” with a value  $y = f(x)$  of a cell in the range corresponding to a previous record having a sample value;
- an “index of next sample field” with a value of the “index field” of a next record having a sample value;

a “X<sub>i</sub>next sample field” with a value of the “X<sub>i</sub> field” of a next record having a sample value;

a “f(X<sub>i</sub>next sample) field” with a value  $y = f(x)$  of a cell in the range corresponding to a next record having a sample value.”

The Examiner argues that Flaherty teaches such a table, but does not cite any such table in Flaherty having the 9 recited fields.

Appellant asserts that Flaherty does not teach any such table having the 9 recited fields. In fact no table appearing in Flaherty depicts more than 7 fields, namely fields A, B, C, D, E, F, G on Flaherty, page 8, and these 7 fields are not the fields recited in the preceding feature of claim 10.

Accordingly, Flaherty does not anticipate claim 10.

In addition, with respect to claim 11, Flaherty does not teach the feature: “wherein said table further comprises for each sample cell i:

- an “index field” for identifying said sample cell;
- a “sample field” for indicating that said cell is a sample cell;
- a “X<sub>i</sub> field” with the value  $x_i$  associated with said sample cell;
- the “index of previous sample field” with the value of the “index field” of said sample cell;

- a “Prev. sample field” with the value of the “X<sub>i</sub> field” of said sample cell;
- the “f(Prev. sample) field” with the value  $y = f(x)$  of said sample cell;
- the “index of next sample field” with the value of the “index field” of said sample cell;
- the “X<sub>i</sub>next sample field” with the value of the “X<sub>i</sub> field” of said sample cell;
- the “f(X<sub>i</sub>next sample) field” with the value  $y = f(x)$  of said sample cell.”

The Examiner argues that Flaherty teaches the preceding recited fields in the table, but

does not cite and such teaching of the recited fields of any table in Flaherty.

In response, Appellant asserts that Flaherty does not teach the recited fields in any table.

Accordingly, Flaherty does not anticipate claim 11.

In addition, with respect to claim 22, Flaherty does not teach the feature: “further comprising designating the selected range of cells as a persistent sampled range of cells (PSROC).”

The Examiner argues: “In reference to claim 22, Flaherty teaches a user can initiate a data series by entering a start value and an end value for a range of cells with a specified step value. By initiating the series dialogue box, a user may change the sample values or step values (i.e. start and stop values) thereby adding or deleting a sample cell or empty cell. See pages 4-5, “Entering a Data Series”. ”

In response, Appellant asserts that the preceding argument by the Examiner has no relevance to the preceding feature of claim 22.

Accordingly, Flaherty does not anticipate claim 22.

In addition, with respect to claim 23, Flaherty does not teach the feature: “wherein a background color of the selected range of cells is a first color before said designating the selected range of cells as a PSROC, and wherein after said designating the selected range of cells as a PSROC the method further comprises changing the background color of the selected range of cells to a second color that differs from the first color”.

The Examiner alleges that “Flaherty teaches custom formatting of cells where a user can

indicate a range of cells and font, border, pattern, and background information. See page 12.”

In response, Applicants asserts that the Examiner’s argument is not persuasive because “background color” does not read on “font, border, pattern, and background information”.

Appellant notes that Flaherty, page 12 is totally silent as to the use of color for any purpose.

Accordingly, Flaherty does not anticipate claim 23.

In addition, with respect to claim 24, Flaherty does not teach the feature: “wherein for at least one empty cell of said empty cells:

said one or a plurality of previous sample cells consists of said plurality of previous sample cells,

said one or a plurality of next sample cells consists of said plurality of next sample cells, or

said one or a plurality of previous sample cells consists of said plurality of previous sample cells and said one or a plurality of next sample cells consists of said plurality of next sample cells.”

The Examiner argues: “In reference to claim 24, Flaherty teaches entering a data series with specific start and stop values entered for a data series. For example cell A2 may contain a start value of 10 and a stop value of 90 is indicated with a step value of 5. See pages 4-5, "Entering a Data Series". In indicating a start and stop value in a series of cells, the "previous sample cell" and "next sample cell" of the empty cells in between the start value and stop value are specified.”

In response, Appellant asserts that the preceding argument by the Examiner has no



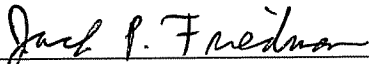
relevance to the preceding feature of claim 24 which requires that use of plurality of previous sample cells, plurality of next sample cells, or use of both a plurality of previous sample cells and a plurality of next sample cells for computing  $y_i$  at the at least one empty cell.

Accordingly, Flaherty does not anticipate claim 24.

SUMMARY

In summary, Appellant respectfully requests reversal of the May 7, 2007 Office Action rejection of claims 1, 2 and 7-24.

Respectfully submitted,

  
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Title: **METHOD AND SYSTEM IN AN ELECTRONIC SPREADSHEET FOR  
PERSISTENTLY FILLING BY SAMPLES A RANGE OF CELLS**

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**APPENDIX A - CLAIMS ON APPEAL**

1. A method for filling empty cells of a range of cells in a multi-dimensional spreadsheet comprising a plurality of cells identified by a cell address along each dimension of the spreadsheet, said method comprising the steps of:

selecting the range of cells, said range comprising a plurality of sample cells and one or a plurality of empty cells, wherein prior to said selecting each sample cell contains a sample value and an empty cell contains no value or a value not considered as a sample value; the content  $y_i$  of each sample cell and each empty cell being associated with a particular value  $x_i$  of a variable  $x$ ;

after said selecting, ordering the sample cells and the empty cells according to the values  $x_i$  associated with the content of said cells;

after said ordering, processing the empty cells comprising, for each empty cell, the steps of:

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identifying the value  $x_i$  associated with the content of the empty cell;  
selecting one or a plurality of previous sample cells with respect to the empty cell;  
selecting one or a plurality of next sample cells with respect to the empty cell;  
computing the value  $y_i$  of the empty cell according to the values  $y_{\text{previous}}$  contained in the selected one or plurality of previous sample cells, and the values  $y_{\text{next}}$  contained in the selected one or plurality of next sample cells;  
filling the empty cell with said computed value  $y_i$ ; and  
after said processing the empty cells, displaying the spreadsheet via a graphical user interface (GUI).

2. The method of claim 1, wherein said step of computing the value  $y_i$  of each empty cell according to the values  $y_{\text{previous}}$  contained in the selected one or plurality of previous sample cells, and the values  $y_{\text{next}}$  contained in the selected one or plurality of next sample cells, comprises the further step of:

computing the value  $y_i$  of the empty cell according to the values  $x_{\text{previous}}$  associated with the content  $y_{\text{previous}}$  of the selected one or plurality of previous sample cells, and the values  $x_{\text{next}}$  associated with the content  $y_{\text{next}}$  of the selected one or plurality of next sample cells.

7. The method of claim 1, wherein the selected range of cells further comprises variable cells, a variable cell containing a value  $x_i$  associated with the content  $y_i$  of a particular sample cell or a particular empty cell.

8. The method of claim 1, wherein the step of computing the value  $y_i$  of an empty cell comprises the step of computing the value  $y_i$  as equal to:

$$y_i = y_{\text{previous}} + (x_i - x_{\text{previous}}) * ((y_{\text{next}} - y_{\text{previous}}) / (x_{\text{next}} - x_{\text{previous}}))$$

where :

$y_{\text{previous}}$  is the content of a previous cell containing a sample;

$x_{\text{previous}}$  is the value of the variable  $x$  associated with the content of the previous cell containing a sample;

$y_{\text{next}}$  is the content of a following cell containing a sample;

$x_{\text{next}}$  is the value of the variable  $x$  associated with the content of a following cell containing a sample;

$x_i$  is the value of the variable  $x$  associated with the empty cell.

9. The method of claim 1, wherein said selected range of cells comprises a double column or double row range of cells, said range of cells comprising  $2N$  cells, wherein the  $i$ -th cell in a first column or first row comprises a value  $x_i$  and the second column or second row comprises a value  $y_i = f(x_i)$ .

10. The method of claim 1, wherein the step of filling cells comprises the further step of: defining a table and associating said table with the selected range of cells, said table comprising for each empty cell  $i$ :

an "index field" for identifying said empty cell;

- a "sample field" for indicating that said cell is an empty cell;
- a " $X_i$  field" with the value  $x_i$  associated with said empty cell;
- an "index of previous sample field" with the value of the "index field" of a previous record having a sample value;
- a "Prev. sample field" with the value of the " $X_i$  field" of a previous record having a sample value;
- a " $f(\text{Prev. sample})$  field" with a value  $y = f(x)$  of a cell in the range corresponding to a previous record having a sample value;
- an "index of next sample field" with a value of the "index field" of a next record having a sample value;
- a " $X_{\text{next sample}}$  field" with a value of the " $X_i$  field" of a next record having a sample value;
- a " $f(X_{\text{next sample}})$  field" with a value  $y = f(x)$  of a cell in the range corresponding to a next record having a sample value.

11. The method of claim 10, wherein said table further comprises for each sample cell i:

- an "index field" for identifying said sample cell;
- a "sample field" for indicating that said cell is a sample cell;
- a " $X_i$  field" with the value  $x_i$  associated with said sample cell;
- the "index of previous sample field" with the value of the "index field" of said sample cell;

a “Prev. sample field” with the value of the “ $X_i$  field” of said sample cell;  
the “ $f(\text{Prev. sample})$  field” with the value  $y = f(x)$  of said sample cell;  
the “index of next sample field” with the value of the “index field” of said sample cell;  
the “Xnext sample field” with the value of the “ $X_i$  field” of said sample cell;  
the “ $f(\text{Xnext sample})$  field” with the value  $y = f(x)$  of said sample cell.

12. The method of claim 11, wherein said table comprises N records, where N equals the number of rows in a single or double column range of cells or the number of columns in a single or double row range of cells.

13. A computer system comprising a processor and a memory coupled to the processor, said memory containing instructions that when executed by the processor implement the method of claim 1.

14. A computer program comprising instructions adapted for carrying out the method of claim 1 when said computer program is executed on a computer, said computer program comprising said instructions being stored on a memory device of a computer system.

15. The method of claim 1, further comprising: responsive to an occurrence of at least one event, automatically again performing said processing the empty cells, wherein the at least one event is selected from the group consisting of

a change of one or a plurality of sample cells in the range,  
a change of one or a plurality of empty cells in the range,  
an addition of one or a plurality of sample cells in the range,  
an addition of one or a plurality of empty cells in the range,  
a deletion of one or a plurality of sample cells in the range,  
a deletion of one or a plurality of empty cells in the range, and  
combinations thereof.

16. The method of claim 15, wherein the at least one event comprises said change of one or a plurality of sample cells in the range.

17. The method of claim 15, wherein the at least one event comprises said change of one or a plurality of empty cells in the range.

18. The method of claim 15, wherein the at least one event comprises said addition of one or a plurality of sample cells in the range.

19. The method of claim 15, wherein the at least one event comprises said addition of one or a plurality of empty cells in the range.

20. The method of claim 15, wherein the at least one event comprises said deletion of one or a



plurality of sample cells in the range.

21. The method of claim 15, wherein the at least one event comprises said deletion of one or a plurality of empty cells in the range.

22. The method of claim 1, further comprising designating the selected range of cells as a persistent sampled range of cells (PSROC).

23. The method of claim 22, wherein a background color of the selected range of cells is a first color before said designating the selected range of cells as a PSROC, and wherein after said designating the selected range of cells as a PSROC the method further comprises changing the background color of the selected range of cells to a second color that differs from the first color.

24. The method of claim 1, wherein for at least one empty cell of said empty cells:

said one or a plurality of previous sample cells consists of said plurality of previous sample cells,

said one or a plurality of next sample cells consists of said plurality of next sample cells,

or

said one or a plurality of previous sample cells consists of said plurality of previous sample cells and said one or a plurality of next sample cells consists of said plurality of next sample cells.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Frederic Bauchot

Examiner: Singh, Rachna

Serial No. 09/995,266

Group Art Unit: 2176

Filed: 11/27/2001

Docket No.: **FR920000062US1**

Title: **METHOD AND SYSTEM IN AN ELECTRONIC SPREADSHEET FOR  
PERSISTENTLY FILLING BY SAMPLES A RANGE OF CELLS**

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPENDIX B - EVIDENCE**

There is no evidence entered by the Examiner and relied upon by Appellant in this appeal.

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**APPENDIX C - RELATED PROCEEDINGS**

There are no proceedings identified in the "Related Appeals and Interferences" section.